

U.S. Pat. App. Ser. No. 10/781,578
Att. Docket No. 10191/3521
Reply to Final Office Action of 01/12/06

Amendments to the DRAWINGS:

Please amend without prejudice the Drawings by replacing them with the three Replacement Sheets for Figures 1 to 3. The text has been increased in size and is believed to be legible. No new matter has been added and support is provided by the specification. Approval and entry are respectfully requested.

Amendments to the CLAIM:

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for operating an internal combustion engine, the internal combustion engine having a compressor to compress air supplied to the internal combustion engine, the method comprising:

measuring an actual pressure ratio across the compressor for diagnosing a compression;

comparing the measured actual pressure ratio ~~with one of a desired setpoint pressure ratio to be set and~~ a modeled actual pressure ratio; and

detecting an error as a function of a result of the comparing.

2. (Currently Amended) The method as recited in claim 1, wherein the modeled actual pressure ratio ~~predetermined reference value~~ is the setpoint pressure ratio across the compressor.

3. (Currently Amended) The method as recited in claim 1, wherein the ~~predetermined reference value~~ is the modeled actual pressure ratio ~~is~~ determined based on at least one engine parameter.

4. (Original) The method as recited in claim 3, wherein the modeled actual pressure ratio is determined as a function of an engine speed and an air mass flow rate.

5. (Original) The method as recited in claim 2, wherein the compressor is an electrically operated supercharger.

6. (Original) The method as recited in claim 5, wherein the diagnosis is performed in one of an idling state and a near-idling state.

7. (Previously Presented) A method for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

measuring an actual pressure ratio across the compressor;

comparing the measured actual pressure ratio with a predetermined reference value;

and

detecting an error as a function of the result of the comparison;

wherein the predetermined reference value is a setpoint pressure ratio across the compressor,

wherein the compressor is an electrically operated supercharger, and

wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

8. (Previously Presented) A method for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

measuring an actual pressure ratio across the compressor;

comparing the measured actual pressure ratio with a predetermined reference value;

and

detecting an error as a function of the result of the comparison;

wherein the predetermined reference value is a setpoint pressure ratio across the compressor,

wherein the compressor is an electrically operated supercharger,

wherein the diagnosis is performed in one of an idling state and a near-idling state,

and

wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

9. (Original) The method as recited in claim 8, wherein a divert air valve is closed for the diagnosis.

10. (Original) The method as recited in claim 2, wherein the compressor is one of an exhaust gas turbocharger and a supercharger.

11. (Original) The method as recited in claim 3, wherein the compressor is an electrically operated supercharger.

12. (Original) The method as recited in claim 11, wherein the diagnosis is performed in one of an idling state and a near-idling state.

13. (Previously Presented) A method for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

measuring an actual pressure ratio across the compressor;

comparing the measured actual pressure ratio with a predetermined reference value;

and

detecting an error as a function of the result of the comparison;

wherein the predetermined reference value is a modeled actual pressure ratio determined based on at least one engine parameter,

wherein the compressor is an electrically operated supercharger, and

wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

14. (Previously Presented) A method for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

measuring an actual pressure ratio across the compressor;

comparing the measured actual pressure ratio with a predetermined reference value;

and

detecting an error as a function of the result of the comparison;

wherein the predetermined reference value is a modeled actual pressure ratio determined based on at least one engine parameter,

wherein the compressor is an electrically operated supercharger,

wherein the diagnosis is performed in one of an idling state and a near-idling state,

and

wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

15. (Original) The method as recited in claim 14, wherein a divert air valve is closed for the diagnosis.

16. (Original) The method as recited in claim 3, wherein the compressor is one of an exhaust gas turbocharger and a supercharger.

17. (Currently Amended) A device for operating an internal combustion engine, the internal combustion engine having a compressor to compress air supplied to the internal combustion engine, the device comprising:

 a determining arrangement, for diagnosing a compression, to determine an actual pressure ratio across the compressor from variables measured by a measuring arrangement;

 a comparing arrangement to compare the actual pressure ratio with ~~one of a desired setpoint pressure ratio to be set~~ and a modeled actual pressure ratio; and

 an error detecting arrangement to detect an error as a function of a result of the comparing.

18. (New) A device for operating an internal combustion engine, the internal combustion engine having a compressor to compress air supplied to the internal combustion engine, the device comprising:

 a determining arrangement, for diagnosing a compression, to determine an actual pressure ratio across the compressor from variables measured by a measuring arrangement;

 a comparing arrangement to compare the actual pressure ratio with a setpoint pressure ration that is to be set; and

 an error detecting arrangement to detect an error as a function of a result of the comparing.

19. (New) A method for operating an internal combustion engine, the internal combustion engine having a compressor to compress air supplied to the internal combustion engine, the method comprising:

measuring an actual pressure ratio across the compressor for diagnosing a compression;

comparing the measured actual pressure ratio with a setpoint pressure ratio that is to be set; and

detecting an error as a function of a result of the comparing.